



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,367	10/07/2003	Kenichi Yokoyama	5988-056-27	4296
23552	7590	12/13/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			LEE, SIN J	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,367

Applicant(s)

YOKOYAMA ET AL.

Examiner

Sin J. Lee

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-9 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,15 and 17 is/are rejected.
- 7) ☒ Claim(s) 3,10-14 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of applicants' argument, previous 103(a) rejection on claims 1-5 and 7-9 over Kobayashi et al'500 in view of Nakano et al (JP'923) and previous 103(a) rejection on claims 1-3 and 6 over Iwasawa et al'769 in view of Nakano et al (JP'923) are hereby withdrawn. As argued by applicants, one skilled in the art would not be motivated to add Nakano's imidazole additive to the resin composition of Kobayashi because Nakano's invention is directed exclusively to compositions comprising alkali soluble novolak resins and quinonediazide compounds where as Kobayashi's resin is p-hydroxystyrene/t-butyl acrylate copolymer, which are very different from the novolak resins. Therefore, one skilled in the art would not have had a reasonable expectation that the proposed combination would have been successful based on the teachings of the cited references. For the same reason, since Iwasawa's resin (alkali soluble polysiloxane resin) is very different from the novolak resin of Nakano, one skilled in the art would not be motivated to add Nakano's imidazole additive to the resin composition of Iwasawa.

2. Due to new ground of rejection, the following rejection is made non-final.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4-6, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakano et al (JP 09-236923 and its Full English translation provided by PTO) (with Uenishi et al (5,089,373) which is being cited here to support the Examiner's assertion that Nakano's naphthoquinonediazido compound is a dissolution inhibitor and with Niki et al (5,658,706), which is being cited here to support the Examiner's assertion that Nakano's naphthoquinonediazido compound is an acid-generator).

Nakano teaches (see pg.2 of English translation, under "Solution mechanism" and see also Application Example 1 in [0027]) a positive photoresist composition containing an alkali-soluble novolak resin, a quinoneazido group-containing compound (such as naphthoquinone-1,2-diazido-5-sulfonic acid ester of 2,3,4,4'-tetrahydroxybenzophenone), and a compound of formula (I) such as 1-benzyl-2-ethylimidazole (which teaches present compound of formula (1) – present R¹, R³, R⁵ and R⁶ being H atoms, present R⁴ being an ethyl group, and present R² being an unsubstituted aryl group).

Nakano's naphthoquinonediazido compound is a *dissolution inhibitor*, as evidenced by Uenishi et al, col.1, lines 36-45, which lowers the solubility of the novolak resin in an alkali solution. But when it decomposes through irradiation, it forms alkali-soluble material and thus elevates the solubility of the novolak in alkali solution. Nakano's naphthoquinonediazido compound is also an acid-generating compound, as evidenced by Niki et al, col.6, lines 23-30. Therefore, Nakano teaches present components (A), (B) and (C-b) of claim 1 and thus teaches present inventions claims 1, 2 (Nakano's naphthoquinone-1,2-diazido-5-sulfonic acid ester of 2,3,4,4'-

Art Unit: 1752

tetrahydroxybenzophenone is a sulfonate compound), 4-6, 15 (present claim language of claims 4-6 and 15 does not require the presence of the resin (C-a)) and 17.

Allowable Subject Matter

5. Claims 3, 10-14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Nakano does not teach or suggest present photoacid generator of claim 3. Nakano does not teach or suggest present compound (A) of claims 10-13. Nakano does not teach or suggest present photoacid generator of claim 14. Nakano does not teach or suggest present component (C-a) of claim 16.

6. Claims 7-9 are allowed. Nakano's composition is positive working and Nakano does not teach or suggest present component (E) of claim 7.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

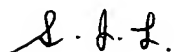
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

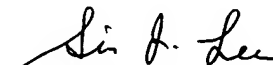
Art Unit: 1752

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
December 11, 2005



SIN LEE
PRIMARY EXAMINER